

Appendix B — Soil Water and Air program Best Management Practices

The following best management practices (BMPs) are to be used to minimize soil erosion and protect water quality when completing forestry or hazardous fuel reduction projects. The management objectives of these projects are achieved by altering vegetation communities. Implementing the BMPs would minimize unnecessary surface disturbance and damage to residual vegetation that protects soils from erosion.

BMP 1: Schedule projects during low-impact period

Definition: Projects would be scheduled to avoid wet soil conditions.

Purpose: Timber and fuels projects can cause soil disturbance and damage non-target plants that provide ground cover. BMP 1 restricts projects to periods that would minimize the likelihood of these impacts.

Applicability: This practice would apply to any project site when significant soil surface disturbance could occur, but is especially important on fine-textured soils and soils with well-developed structure, such as loams. These soils are especially prone to compaction, rutting, and similar impacts.

Planning Criteria: If contracting or scheduling in-house labor, plan to complete work during periods when soils are typically dry. Fall and winter are the preferred seasons for fuels projects due to the low risk of wildfire, BLM budget cycles, and greater availability of fire personnel. Regional precipitation primarily occurs in winter, however, so flexibility should be provided in the work schedule to avoid wet conditions.

BMP 2: Minimize and mitigate surface disturbances

Definition: Methods that avoid unnecessary surface disturbance would be chosen.

Purpose: These management practices would reduce or mitigate surface disturbances which can lead to soil erosion in many ways, including (1) directly detaching and transporting soil, (2) exposing soil to erosion by reducing non-target vegetative ground cover, (3) compacting soils and reducing infiltration, and (4) rutting that concentrates overland flow.

Applicability: BMP 2 would apply to any project site where significant surface disturbance could occur, but is especially important on fine-textured soils and soils with well developed structure, such as loams. These soils are especially prone to compaction, rutting, and similar impacts.

Planning Criteria: Site access should minimize the amount and intensity of disturbance associated with vehicle traffic and off-road travel. Choose appropriate treatment methods to minimize surface disturbance and to avoid impacts to non-target plants when felling trees, operating machinery, and performing other tasks.

Methods: Minimize the area and intensity of disturbance. For example, a road that switchbacks up a slope would disturb a greater area, but have less impact than one directed up and down a slope. Avoid repeated vehicle and equipment traffic on areas that are prone to soil and vegetation impacts. Plan vehicle routes where they would do the least damage, such as rock outcrops or coarse-textured soils that resist compaction. Travel and conduct treatment operations along the contour of the slope to the extent possible to avoid channelizing overland flow. When leaving slash or wood chips onsite, scatter over disturbed areas to protect exposed soils from raindrop impact.

BMP 3: Avoid sensitive riparian areas, wetlands, and drainages

Definition: Exclude treatment from sensitive riparian areas, wetlands, and drainages, including an adequate buffer where appropriate. The presence of water in these areas could be ephemeral, so BMP 3 might be necessary where no surface water is present during project planning and implementation. Note that BMP 3 could be modified or limited for projects that target plants in these areas (e.g., removing juniper near a spring to reduce competition with riparian species).

Purpose: BMP 3 is designed to protect sensitive riparian and wetland areas, and to prevent sediment deposition in drainages where the sediment could be transported to other water bodies.

Applicability: This practice could apply to any project where an identifiable drainage exists, but is especially important for perennial waters, riparian and wetland areas, and where a drainage leads from the project area to a water body.

Planning Criteria: Survey the project area to identify riparian and wetland areas, and drainages. Evaluate the potential for sediment to be generated by the project and delivered to offsite water bodies. Determine what areas would be left untreated to protect these resources. Size of buffers would depend on project objectives and site conditions, such as soil type, vegetative cover, slope, and aspect.

Methods: Mark buffer areas to be left untreated or where treatment would be limited. Be sure work crews have clear instructions on the meaning of any markers. Map avoidance areas in GIS to facilitate planning and communication with work crews. When necessary, have a project inspector onsite during operations to instruct crews on avoidance areas. If avoidance is unfeasible, use portable bridges or other devices to prevent impacts. Do not perform equipment maintenance onsite where fuel, lubricants, or other contaminants could enter water bodies.